Appl. No. 09/388,804
Amdt. dated 05/31/2005
Reply to Office action of December 28, 2004

REMARKS

This Amendment is in response to the Final Office Action mailed December 28, 2004. Applicant has filed a Request for Continued Examination to have the Office withdraw the finality of the Office Action and have this submission entered and considered. In the Office Action, the Examiner rejected claims 1, 5-9, 12, and 16-23 under 35 U.S.C. § 102, and rejected claims 2-4, 10-11, and 13-15 under 35 U.S.C. § 103. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

Rejection Under 35 U.S.C. § 102

2.   The Examiner rejects claims 1, 9, and 12 under 35 U.S.C. § 102(e) as being anticipated by Putcha et al. (US Pub 2003/0198241 A1).

With respect to claims 1, 9, and 12, applicant has amended these claims to provide the element of --throttling one of the first number of local area network (LAN) ports to control utilization of the router resource-- and to more clearly point out that the throttling is at the entry point of the router resource and that the throttling is according to both bandwidth availability and switching capacity. The Examiner asserts that Putcha disclosure of a buffer allocation algorithm that allocates additional buffers when there is an unexpectedly high cell loss in paragraph [0070] anticipates the claimed invention. Applicant respectfully submits that the claims as amended are clearly distinguished from the disclosure of Putcha.

Throttling as now claimed is distinctly different than the adding of buffers as disclosed by Putcha. Throttling reduces the amount of traffic from a LAN port that is handled by the switch. Adding buffers provides additional temporary storage for cells so that the amount of traffic from

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a LAN port is <u>not reduced</u>. Further, control of the buffer allocation based on cell loss does not distinguish between cell loss due to lack of bandwidth and loss due to lack of switching capacity, which are directly related capacities in the ATM switch disclosed by Putcha. Paragraph [0053]. Applicant points to the fact that Putcha's disclosure is directed to an ATM switch <u>not</u> for the purpose of distinguishing the present invention because it handles a variety of packet sizes while an ATM switch handles a fixed packet size but rather to point out that the disclosure of Putcha <u>cannot</u> disclose control that is based on the independent measures of switch performance of bandwidth availability <u>and</u> switching capacity as claimed. Therefore Putcha fails to disclose each and every element of these claims as amended.

Applicant respectfully requests that the Examiner withdraw the rejection of claims 1, 9, and 12 under 35 U.S.C. § 102(e) as being anticipated by Putcha.

3.   The Examiner rejects claims 5-8, and 16-23 under 35 U.S.C. § 102(b) as being anticipated by Hanson et al. (US 5,633,861).

With respect to claims 5 and 16, applicant has amended these claims to provide the elements of determining whether to admit inbound traffic at an entry point, and determining the LAN bandwidth availability <u>from the</u> bandwidth of the assigned WAN links. Applicant respectfully submits that Hanson does not disclose a router resource as claimed that controls admission to the router resource based on the bandwidth and switching capacity of the WAN links assigned to the LAN port. Hanson discloses a system for measuring CUF of an output port by looping back utilization information from the destination node and controlling the admission of traffic <u>to the network</u> accordingly. The present invention determines a bandwidth capacity for the entry port of the router based on the bandwidth capacity of the assigned WAN links and

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limits admission of input traffic at the entry port according to the assigned capacity. This allows traffic to be limited before it ever enters the router based simply on the capacity of the assigned WAN links. Unlike Hanson, the claimed invention provides for limiting the traffic handled by the router rather than by the network and setting the limits based on the capacities of the WAN links rather than the utilization of the network links.

With respect to claims 6-8, and 17-21, applicant respectfully submits that Hanson does not disclose the additional elements of these claims in view of the amendments to claims 5 and 16 from which these claims depend.

With respect to claims 22 and 23, applicant relies on the patentability of the claims from which these claims depend to traverse the rejection without prejudice to any further basis for patentability of these claims based on the additional elements recited.

Applicant respectfully requests that the Examiner withdraw the rejection of claims 5-8, and 16-21 under 35 U.S.C. § 102(b) as being anticipated by Hanson.

Rejection Under 35 U.S.C. § 103

4.   The Examiner rejects claims 2 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Putcha et al. (US Pub 2003/0198241 A1) in view of Bonomi et al. (US 5,838,681).

With respect to claims 2 and 13, the Examiner admits that Putcha does not disclose individual ones of the LAN ports are permitted to exceed their fair share of the switching capacity of the router resource if a current switching load due to traffic from all of the LAN ports is less than a maximum switching capacity for the router resource. The Examiner asserts that

Bonomi discloses (col. 9,lines 37-40) that the CPU allocates switch capacity among the ports in accordance with their needs, as long as the total aggregate capacity of the switching core (switching capacity of the router) is not exceeded. Applicant respectfully disagrees.

As discussed in the specification on page 7, line 16, through page 8, line 8, bandwidth and switching capacity are distinctly different resources of a router. Bandwidth is the capacity of the switching resource to transfer a given amount of data in a given time. Bandwidth is the maximum data rate available through the switching resource. Switching capacity is the maximum number of data packets that can be switched by the switching resource in a given time. As explained in the specification on page 8, lines 5-7, switching capacity can be exceeded without exceeding the bandwidth if the data being switched is in the form of small packets.

Applicant respectfully submits that Bonomi discloses only allocation of switch capacity based on data rate and that data rate is limited by bandwidth. See, for example, col. 9, lines 46-52. Applicant can find nothing in Bonomi that teaches or suggests individual ones of the LAN ports are permitted to exceed their fair share of the switching capacity of the router resource if a current switching load due to traffic from all of the LAN ports is less than a maximum switching capacity for the router resource.

Applicant further submits that there is no motivation to combine Bonomi with Putcha since Putcha already regulates traffic based on the bandwidth. See for example paragraph [0060]. Further, there would be no expectation of success in combining the references because each provides a scheme for regulating traffic based on the bandwidth and a combination of the two references could be expected to introduce mechanisms that conflicted in attempting to perform the same function in two different ways.

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Even if the reference were combined the combination would still fail to teach each and every limitation of the invention since neither reference teaches or suggests individual ones of the LAN ports are permitted to exceed their fair share of the switching capacity of the router resource if a current switching load due to traffic from all of the LAN ports is less than a maximum switching capacity for the router resource.

Applicant respectfully requests that the Examiner withdraw the rejection of claims 2 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Putcha in view of Bonomi.

5.   The Examiner rejects claims 3-4, 10-11, and 14-15 under 35 U.S.C. § 103(a) as being unpatentable over Putcha et al. (US Pub 2003/0198241 A1) in view of Hanson et al. (US 5,633,861).

With respect to claims 3-4, 10-11, and 14-15, applicant relies on the patentability of the claims from which these claims depend to traverse the rejection without prejudice to any further basis for patentability of these claims based on the additional elements recited.

Rebuttal to Examiner's Response

6.   The Examiner finds applicant's arguments filed August 26, 2004 unpersuasive.

The Examiner disagrees with applicant's arguments that Putcha fails to teach or suggest the claimed limitation "switching data traffic having packets of data of a plurality of sizes between a first number of LAN ports and a second number of WAN links of the router resource" in the amended independent claims 1, 9, and 12. The Examiner responds that Putcha discloses on page 3, 28th paragraph and on page 4, 53rd paragraph, that the communication network device

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may be a circuit switch, a bridge, or a router using a connection oriented protocol, or may be another similar device arranged to direct data units transferred from an origination device to a destination device over a communication network. This implies that the network communication device may be an IP router. Further, it is known that an IP router directing traffic having variable length packets and having plurality of input/output ports for interconnecting LANs to form a wide area network (WAN) (switching data traffic having packets of data of a plurality of sizes between a first number of LAN ports and a second number of WAN links of a router resource).

Applicant responds by pointing out that Applicant argues that Putcha fails to teach or suggest "switching data traffic having packets of data of a plurality of sizes between a first number of LAN ports and a second number of WAN links of the router resource" not for the purpose of distinguishing the present invention because it handles a variety of packet sizes while an ATM switch handles a fixed packet size but rather to point out that the disclosure of Putcha cannot disclose control that is based on the independent measures of switch performance of bandwidth availability and switching capacity as claimed.

The Examiner disagrees with applicant's argument on page 10 that Hanson fails to teach or disclose a router resource that controls admission based on the bandwidth and switching capacity of the router resource. The Examiner responds that Hanson discloses in Fig. 3, that packets are admitted to the switch according to network utilization information such as switching capacity and trunk bandwidth.

Applicant responds that Hanson discloses in Fig. 3, that packets are admitted to the network according to network utilization information. Col. 10, line 54, to col. 11, line 6. This is

unlike the claimed invention that admits packets to the <u>router</u> according to <u>the bandwidth availability of the assigned WAN links</u>, a router parameter.

The Examiner disagrees with applicant's argument on page 11 that Bonomi fails to teach or suggest that individual ones of the LAN ports are permitted to exceed their fair share of the switching capacity of the router resource if a current switching load due to traffic from all of the LAN ports is less than a maximum switching capacity of the router resource. The Examiner responds that Bonomi discloses (col. 9, lines 37-40) that the CPU allocates switch capacity among the ports in accordance with their needs, as long as the total aggregate capacity of the switching core (switching capacity of the router) is not exceeded. This implies that (as interpreted by the examiner) when one of the ports has a higher demand for the switching capacity than other ports, the switching capacity then allocated by the switch, since the switching capacity is allocated according to the needs of the ports. In other words, a port is allowed to exceed its initial allocated switching capacity as long as the total aggregate capacity is not exceeded.

Applicant responds that Bonomi discloses a system and method for routing data between input and output ports in an ATM node. Abstract. Thus Bonomi does not disclose a system where there is distinction between bandwidth and <u>switching</u> capacity. Bonomi use <u>switch</u> capacity as a synonym for bandwidth. Col. 1, lines 19-20. The term "switch capacity" as disclosed by Bonomi is distinct from the term "switching capacity" as used in the disclosure of the present invention.

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Conclusion

Applicant reserves all rights with respect to the applicability of the doctrine of equivalents.
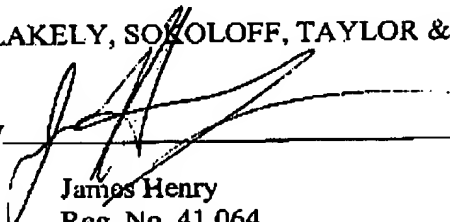
Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 05/31/2005   By_____

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